

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

200233

435 Guiping Road, Shanghai, P.R.China

SHANGHAI PATENT & TRADEMARK AGENCY

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 *bis*.1)

Date of mailing  
(day/month/year)

09 MAR 2006 09:03:2006

Applicant's or agent's file reference  
054429PC

**FOR FURTHER ACTION**

see paragraph 2 below

International application No.

PCT/CN2005/000852

International filing date (day/month/year)

15.Jun 2005(15.06.2005)

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC

G06F12/00 (2006.1) i

Applicant

INTEL CORPORATION et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN  
The State Intellectual Property Office, the  
P.R.China 6 Xitucheng Rd., Jimen Bridge,  
Haidian District, Beijing, China 100088  
Facsimile No. 86-10-62019451

Date of completion of this opinion

20.Feb 2006(20.02.2006)

Authorized officer



Telephone No. 86-10-62064929

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/CN2005/000852

**Box No. I Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed  
☐ filed together with the international application in electronic form  
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/CN2005/000852

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement:**

Novelty (N)	Claims 1-21	YES
	Claims	NO
Inventive step (IS)	Claims 1-21	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-21	YES
	Claims	NO

**2. Citations and explanations**

The invention discloses a system and its method and a machine-readable medium for using transacted writes and caching mechanism to improve write performance in multi-level cell flash memory in which the file includes a number of data fragments and at least one sequence table. The method comprises writing the data fragments to a non-volatile memory; writing the at least one sequence table including sequence table entries which identifies locations of the data fragment written to the non-volatile memory to a volatile memory. The sequence table entries may comprise a data field for the locations, and, an entry allocating field and entry valid field to protect the sequence table entry in case of power loss.

Documents D1-D4 cited in this Search Report are considered to be the closest prior art:

D1: CN1254881A

D2: CN1517906A

D3: CN1279782A

D4: US5898868A

D1 discloses a hierarchically managed file system, its record and replay method and electronic device containing said system. The management information on lower order hierarchy is referred when recording file to divided area of disk. If free divided area is not found, then management information on higher order hierarchy is referred and file is recorded. A software controller controls lower and higher order hierarchy depending on characteristics of file.

D2 discloses a document system and document management method. The file system created on storage medium is composed of a data region for storing actual file data and a meta-data region for storing mark data used for mapping between physical data and logical data. It features that the unidirectional link table of the physical positions for the data of each actual file in the data region is stored in the meta-data region for managing the actual files according to the index address of each unidirectional link table.

D3 discloses a computer system. The computer system comprises a data cache, an integrated register file in which data is written in each of entries, an advanced pointer stack and a completion pointer stack in which the addresses of the entries of the integrated register file are written into entries. An instruction queue has the construction of a FIFO in which the contents of each of instructions are written into each entry, arithmetic units, and a loading/storing unit.

D4 discloses a method and system for managing memory in a block-erasable, flash-erasable, programmable, read-only memory. The system comprises a block-erasable FEPRM with a block header, a block allocation table, a data storage area, a block allocation routine for selecting a block in which to store data, a data area allocation routine for selecting an entry in the block allocation table and a portion of the data storage area, and a storage routine for storing the data. The system includes a file manager to implement a file system for the block-erasable FEPRM.

**I. NOVELTY**

Claims 1-21 have novelty under PCT33 (2) because none of D1-D4 discloses all the technical features of Claims 1-21.

**II. INVENTIVE STEP**

Claims 1-21 have inventive step under PCT 33(3), because the technical solutions protected by Claims 1-21 are not obvious for the skilled in the art on the basis of D1, D2, D3 or D4 or any of their combination.

**III. INDUSTRIAL APPLICABILITY**

Claims 1-21 have industrial applicability under PCT 33(4), because the technical solutions protected by Claims 1-21 can be applied in industry.